

What Is Claimed Is:

1. An isolated polypeptide comprising the amino acid sequence shown in SEQ ID NO:2.

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2. An isolated DNA molecule encoding said polypeptide of claim 1.

3. The isolated DNA molecule of claim 2, wherein said isolated DNA molecule is a cDNA molecule.

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4. The cDNA molecule of claim 3, comprising the nucleotide sequence shown in SEQ ID NO:12.

5. The cDNA molecule of claim 3, comprising nucleotides 116 to 269 of the nucleotide sequence shown in SEQ ID NO:12.

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6. A recombinant, double-stranded DNA molecule, comprising operatively linked in the 5' to 3' direction:

a) a promoter that functions in plant cells to cause the production of an RNA sequence;

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b) a structural coding sequence that encodes said isolated polypeptide of claim 1; and

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c) a 3' non-translated region that functions in plant cells to cause transcriptional termination and the addition of polyadenylate nucleotides to the 3' end of said RNA sequence.

7. The DNA molecule of claim 6, wherein said structural coding sequence is a cDNA molecule.

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8. The DNA molecule of claim 7, wherein said cDNA molecule comprises a member selected from the group consisting of the nucleotide sequence shown in SEQ ID NO:12, and nucleotides 116 to 269 of the
5 nucleotide sequence shown in SEQ ID NO:12.

9. The DNA molecule of Claim 6, wherein said promoter is selected from the group consisting of the FMV 35S promoter, the CaMV 35S promoter, the ssRUBISCO promoter, the EIF-4A promoter, the LTP
10 promoter, the actin promoter, and the ubiquitin promoter.

10. A method of controlling fungal damage to a plant, comprising providing to the locus of said plant said isolated polypeptide of claim 1.

15 11. The method of claim 10, wherein said fungal damage is caused by a fungus selected from the group consisting of the genera *Alternaria*; *Ascochyta*; *Botrytis*; *Cercospora*; *Colletotrichum*; *Diplodia*; *Erysiphe*; *Fusarium*; *Gaeumanomyces*; *Helminthosporium*; *Macrophomina*; *Nectria*; *Peronospora*; *Phoma*; *Phymatotrichum*; *Phytophthora*; *Plasmopara*;
20 *Podosphaera*; *Puccinia*; *Puthium*; *Pyrenophora*; *Pyricularia*; *Pythium*; *Rhizoctonia*; *Scerotium*; *Sclerotinia*; *Septoria*; *Thielaviopsis*; *Uncinula*; *Venturia*; and *Verticillium*.

12. The method of claim 10, wherein said polypeptide is provided to
25 said plant locus by plant-colonizing microorganisms which produce said antifungal polypeptide.

13. The method of claim 10, wherein said polypeptide is provided to said plant locus by applying a composition comprising said isolated
30 polypeptide thereto.

14. The method of claim 10, wherein said polypeptide is provided to said plant locus by expressing DNA encoding said polypeptide within cells of said plant.

5 15. The method of claim 10, wherein said polypeptide consists essentially of the amino acid sequence shown in SEQ ID NO:2.

16. A method of controlling fungal damage to a plant, comprising the steps of:

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a) inserting into the genome of a plant cell a recombinant, double-stranded DNA molecule comprising:

(i) a promoter that functions in plant cells to cause the
15 production of an RNA sequence;

(ii) a structural coding sequence that encodes said isolated polypeptide of claim 1;

20 (iii) a 3' non-translated region that functions in said plant cells to cause transcriptional termination and the addition of polyadenylate nucleotides to the 3' end of said RNA sequence;

b) obtaining transformed plant cells; and

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c) regenerating from said transformed plant cells a genetically transformed plant, cells of which express an antifungal effective amount of said polypeptide of claim 1.

30 17. The method of claim 16, wherein said structural coding sequence is a member selected from the group consisting of the nucleotide sequence

shown in SEQ ID NO:12, and nucleotides 116 to 269 of the nucleotide sequence shown in SEQ ID NO:12.

18. The method of claim 16, wherein said promoter is selected from
5 the group consisting of the FMV 35S promoter, the CaMV 35S promoter, the ssRUBISCO promoter, the EIF-4A promoter, the LTP promoter, the actin promoter, and the ubiquitin promoter.

19. A plant, cells of which contain an antifungal effective amount of
10 said polypeptide of claim 1.

20. The plant of claim 19, wherein said plant is produced by a method comprising the steps of:

15 a) inserting into the genome of a plant cell a recombinant, double-stranded DNA molecule comprising:

(i) a promoter that functions in plant cells to cause the production of an RNA sequence;

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(ii) a structural coding sequence that encodes an isolated polypeptide comprising the amino acid sequence shown in SEQ ID NO:2;

(iii) a 3' non-translated region that functions in said plant cells
25 to cause transcriptional termination and the addition of polyadenylate nucleotides to the 3' end of said RNA sequence;

b) obtaining transformed plant cells; and

c) regenerating from said transformed plant cells a genetically transformed plant, cells of which express an antifungal effective amount of said polypeptide.

5 21. The plant of claim 20, wherein said structural coding sequence is a member selected from the group consisting of the nucleotide sequence shown in SEQ ID NO:12, and nucleotides 116 to 269 of the nucleotide sequence shown in SEQ ID NO:12.

10 22. The plant of claim 19, the genome of which comprises one or more additional DNA molecules encoding an antifungal peptide, polypeptide, or protein, wherein said one or more additional DNA molecules are expressed and produce an antifungal effective amount of said peptide, polypeptide, or protein encoded thereby.

15 23. The plant of claim 19, the genome of which comprises DNA encoding a *B.t.* endotoxin, wherein said DNA is expressed and produces an anti-insect effective amount of said *B.t.* endotoxin.

20 24. The plant of claim 19, wherein said plant is a member selected from the group consisting of apple, barley, broccoli, cabbage, canola, carrot, citrus, corn, cotton, garlic, oat, onion, an ornamental plant, pea, peanut, pepper, potato, rice, rye, sorghum, soybean, strawberry, sugarbeet, sugarcane, tomato, a vine, and wheat.

25 25. The plant of claim 19, wherein said plant is a potato plant.

26. A potato seedpiece produced by said plant of claim 25.

30 27. An antifungal composition, comprising an antifungal effective amount of said isolated polypeptide of claim 1, and an acceptable carrier.

28. A method of combatting an undesired fungus, comprising contacting said undesired fungus with an antifungal effective amount of said isolated polypeptide of claim 1.